

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Yoshiyuki Muneno et al.
Serial No. : 09/807,319
Filed : June 4, 2001
For : EXPLOSIVE COMPOSITION FOR FIREWORKS AND
METHOD FOR MANUFACTURING THE SAME
Examiner : Miller, Edward A.
Art Unit : 3641
Attorney
Docket No. : 441P066

Commissioner for Patents
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Sir:

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Name of applicant, assignee, or Registered
Representative

[Signature] Signature
October 14, 2004
Date

DECLARATION UNDER 37 C.F.R. §1.132

I, Atsuo Inoue, hereby declare:

That I am currently a manager in the Explosives Research and Development Department of Nippon Kayaku Kabushiki Kaisha, and have been in that position since December 1, 2001;

That I hold a Bachelor of Science degree in chemistry from OKAYAMA University;

That I am a named inventor on five issued United States patents in the field of explosives;

That I have reviewed the above-referenced patent application as well as the Office Actions, and I am familiar with its prosecution and the cited reference. The tests reported in the following pages were carried out by me or under my supervision,

and I have made the following observations and conclusions with respect thereto.

In this report, burning properties are compared between the pyrotechnic composition as claimed in US Patent Application Serial No. 09/807,319 and a control pyrotechnic composition prepared without using nitromethane (nitroalkane).

Materials and Methods

Pyrotechnic Compositions. Pyrotechnic Composition A (present invention) was prepared according to Example 2 in the specification of the '319 application. Pyrotechnic Composition B (control) was prepared according to Example 2 in the specification of the '319 application, except that nitromethane was not used in the preparation. Both compositions were shaped into a bar of same size (bar length: 10 cm).

Burning Tests. Each pyrotechnic composition was ignited after loaded in a groove on a steel plate and the burning duration was measured with a stopwatch. The flame hue was observed with the naked eye.

Results

The results of the burning tests are shown in Table I. In the Table, Burning Rate (duration) is expressed as the mean of three separate experiments.

Table I

| | Composition A (present invention) | Composition C (control) |
|--------------------------|--------------------------------------|----------------------------|
| Burning Rate (second) | 8.1 | 3.0 |
| Flame Hue | Vivid | Whitish and Dull |

Conclusion

Pyrotechnic Composition B (control) is considered as unsuitable for pyrotechnic compositions because the burning rate was too fast and the flame hue was too whitish. In contrast, Pyrotechnic Composition A (present invention) is suitable for pyrotechnic compositions because the burning rate was adequate and the flame hue was vivid. It is confirmed that the pyrotechnic composition of the present invention is quite different from the control pyrotechnic composition on reflecting the differences in the preparation process.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may

jeopardize the validity of the application or any patent issuing
thereon.

Atsuo Inoue
Atsuo Inoue

October 7, 2004
Date